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Intellectual, academic, and social-emotional development were compared for physically handicapped, homebound students with whom a method of combined instruction was tried for 15 months which utilized radio broadcasts, group telephone hook-up with subject specialist broadcast teachers, and regular visits from home instruction teachers. The 30 experimental and 23 control students all had long-term homebound expectancy in grades 9 to 11. All were given individual psychological examination and interview, speech recordings, and achievement tests, questionnaires were submitted to parents, teachers, and siblings; and consultants judged social-emotional factors and speech. Results indicated no significant differences in intellectual or academic development, including speech, or in social maturity. Teacher ratings and clinician judgment of figure drawings indicated that the experimental students showed a significantly more positive orientation towards social interest (p .05); however, the social interest was not reflected in behavioral change. Those who dropped out before completion of the project lacked motivation, were below average in intellectual potential, were close to completion of their academic career because of age rather than grade placement, or improved sufficiently in health to return to school. (Author/JD)

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EVALUATION OF A METHOD OF SCHOOL-TO-HOME TELEPHONE INSTRUCTION OF PHYSICALLY HANDICAPPED, HOMEBOUND ADOLESCENTS

Project No. 2924
Contract No. 6-10-166

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June 1968

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Board of Education of the City of New York

New York, New York

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Evaluation of a new method of instruction, particularly one which uses technological innovations and individual psychological appraisal of pupil status, involves the coordinated efforts of skilled and devoted persons.

The request for the research which embodied the original idea for the program was initially made by Mr. Marcus Arnold, Director of the Bureau for the Education of the Physically Handicapped through Mr. Richard Lubell, Assistant Superintendent in charge of the Office of Special Education and Personnel Services to Dr. J. Wayne Wrightstone, Assistant Superintendent in charge of the Office of Educational Research. The program was carried out in cooperation with the High School of the Air coordinated by Mr. Louis Kleinman under the supervision of Dr. Thomas Van Sant, Assistant Superintendent in charge of Special Services.

The original grant proposal and research design were prepared by Dr. Kathleen Lolis, Research Psychologist under the direction of Dr. Samuel D. McClelland and Dr. J. Wayne Wrightstone. The project was directed by Dr. Lolis under their general direction and the work of the clinical psychologists employed was directly supervised by her.

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INTRODUCTION

Homebound, physically handicapped adolescents in large urban centers have been isolated from contact with their peers, from the cultural advantages available to children who are not shut-in and, even though served by a home teacher, have been denied the opportunity to be taught by subject specialists.

The established New York City procedure has enabled the homebound adolescent population to listen to radio broadcast lessons of fifteen minutes' duration, conducted by subject specialists. The method did not provide for the feedback to the broadcast teacher essential to determine the amount of learning taking place, nor was provision made for contact with other students.

The experimental method under evaluation in this study was planned to provide follow-up of the radio broadcast lesson by means of a group telephone teleclass conducted by the broadcast teacher with a group of homebound students. This method differs from a teleclass reported in California[1], which provides group participation, peer interaction, recitation and discussion opportunities for a group of pupils taught completely by teleclass without radio broadcasts or the visits of a home teacher.

In the experimental School-to-Home Telephone project, students were enabled by group telephone to talk to the teacher and each other. Educators have pointed out the essential needs of the homebound student for motivation, stimulation and personality development. Dodd[2] states that the use of the home-to-school telephone provides "social contacts which identify the shut-in with his peers and develops him more than educationally, removing the sense of isolation which makes personality development difficult." Pelone and Simches[3] further point out that there are more purely educational values which homebound children can derive from the use of home-to-school telephone. "Traditional home instruction itself, conducted by a teacher alone, is educational but it does not have the ingredients of this system (school-to-home telephone) which gives the homebound child the motivation and stimulation that can only be derived from direct contact with other students." Richards[4] finds a unique application at the secondary level "where it offers a partial solution to the problem of providing specialized secondary school curriculum for the handicapped student. By telephone the pupil participates actively in a class taught by a certified teacher of the particular subject."

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[1] "Teleclass in L. A. Schools" - by Kathleen C. Curnow, California Education, Vol. III, No. 5, January, 1966

[2] John W. Dodd, "The Development of Teaching by Telephone in New York State," Journal of N.Y. State School Boards Assn., Inc., Sept. 1955, pp. 39-41

[3] Anthony J. Pelone and Raphael F. Simches, "School by Telephone: An Opportunity for the Handicapped" - New York State Education, March 1961, p. 18

The major research hypothesis tested in the present study is that a school-to-home telephone service used in conjunction with a radio broadcast class and a home teacher will have a more favorable impact upon the intellectual, social, and emotional growth of physically handicapped homebound youngsters at the secondary level of education than radio broadcast combined only with a home teacher.

METHOD

1. General Design

The basic design consisted of an experimental and control group. Each student of the experimental group had, in addition to a home teacher, a school-to-home telephone which enabled him to communicate with the radio teacher, the radio class in the studio and with other students on home instruction connected for the same lesson. Each control student had a home teacher and a radio which enabled him to tune into the radio broadcast classes, but did not have the special school-to-home telephone hook-up.

The independent variable (School-to-Home telephone coordinated with radio broadcast and a home teacher) provided increased communication to physically handicapped, homebound adolescents who tend to be an isolated group. The increased opportunities for communication should have enabled them, through increased social opportunities, to improve their chances for adjustment in the social-emotional sphere in adult life. In addition, the radio broadcast technique allowed these homebound students to have a specialist-teacher in various subjects. The home teacher wasn't expected to be a specialist in each secondary-level subject taught. The combination of subject specialists and the increased communication possibilities were expected to have an effect of intellectual stimulation on the homebound student and result in academic gains.

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[4] J. A. Richards, "Phone Pierces Isolation Curtain for Shut-Ins," Film World and Audio-Visual News, April, 1961

The students who participated in this program were those who were visited on a regular basis by a teacher sent from the Department of Home Instruction. Three to four visits (of an hour's duration) each week were the rule. The home instruction teacher covered all major areas of the secondary curriculum. The students were placed on home instruction and withdrawn from it only on the recommendation of a physician.

The Home Instruction Department provided interested high school students with short-wave radios which enabled them to tune into the High School of the Air. The High School of the Air classes broadcast from Brooklyn Technical High School over station WNYE five days a week. In order to provide teacher-student rapport, instead of a regular class in the subject, each class had four "average" students from Brooklyn Technical High School who attended the broadcast class taught by the High School of the Air teacher.

Each week four twenty-minute lessons in Biology were given. All other periods were fifteen minutes and were as follows: American History - 4 periods; World History - 3 periods; General Science - 4 periods; English 1-2 - 3 periods; English 3-4 - 4 periods; English 5-6 - 5 periods; English 7-8 - 5 periods.

The students enrolled in the High School of the Air had lesson plans at home mailed to them in advance, complete with practice sheets, and did homework assignments in textbooks provided by the Board of Education. The faculty of the High School of the Air corresponded with individual students and made occasional home visits. The fifteen-minute lessons from those subject specialists were short and could only touch high lights. There was not sufficient opportunity to follow-up instruction with the homebound students to see what had been learned and to incorporate pupil progress in the next lesson.

With the use of school-to-home telephone, the students in the experimental group were able to tune in to the class at the end of the fifteen-minute broadcast and talk for a half hour, not only to the class and to the teacher, but to the dozen or so students on home instruction who were programmed for participation in this particular class.

It was the general design of this study to use all instruments, i.e.; questionnaires, interviews and tests with the experimental and control groups before the experimental variable was in operation and again after an interval of fifteen months during which time the experimental variable had been in effect.

2. Population and Sample

The study was conducted in the borough of Brooklyn which is in all respects a large city, even though politically it is a subdivision of New York City. Valid results for Brooklyn, when based upon an adequate design, may be generalized to all large urban areas. The average daily register in Brooklyn schools is over 360,000.

The experimental population was a total population. All secondary school students on home instruction because of handicaps due to chronic medical, cardiac, orthopedic, neurological or neuro-muscular difficulties were included in the experiment.

The students enlisted for participation in the study were all those whose handicaps indicated relatively permanent retention on home instruction and the diagnoses included muscular dystrophy, cerebral palsy, cardiac difficulties, severe respiratory and vascular disorders, miscellaneous neurological disorders, severe arthritis, severe burns, pernicious anemia and leukemia. The eighty-eight children were in grades nine through eleven in Brooklyn and had relatively permanent illnesses and/or handicaps.

An initial letter was sent to the parents of all these students.[5] In addition, the regularly assigned home instruction teachers, who met with the project director at frequent intervals, were oriented to acquaint their students with the nature of this project. Responses were received from all eighty-eight families contacted. Two students had returned to school, one had died, one had been discharged from home instruction because of cyesis, one had been dropped from home instruction as being "too old," one had been sent to a state hospital and four, with respective diagnoses of para paresis, diabetes, osteogenesis, and marked fearfulness of telephones, were unable to participate. For each of the remaining seventy-five a coin was tossed. The result of "heads" placed the child in the experimental group. The project began with forty-two experimental and thirty-three control students. The selection by toss of a coin was not made until after all the initial instruments were administered.

As of February 5, 1966, the experimental group began to participate in their School-to-Home telephone lessons. The thirty-three control students continued to have available to them the radio broadcasts and received visits from their home instruction teachers as did the forty-two students in the experimental group, but the control students did not have the group telephone device. The experimental variable ended April 28, 1967.

3. Data

Data were collected by means of a series of instruments which are briefly described below, and copies of which appear in the Appendix.

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[5] A copy of the letter appears in the Appendix

Instrument I, Pupil Background Data, yielded information about the pupil population but was not used as a criterion variable.

Using the other instruments, data were collected concerning both experimental and control groups on a pre-experimental basis between November, 1965 and January 1966, and on a post-experimental basis in May and June, 1967.

Instrument II, the Scale of Social Maturity, questioned home instruction teachers on the students' interest in literature,social interests, personal hygiene and appearance, study habits, participation in High School of the Air broadcasts, use of School-to-Home Telephone service, and potential for return to school from home instruction.

Instrument III, the Parental Report, questioned parents on the nature of the child's handicap, physical limitation and necessary prosthetic devices. Also elicited was the student's interest in literature and the world around him, his activities out of the home, assumption of personal responsibilities, care of himself and his personal things, social interests, social responsibilities, business activities, care of his own health and prosthetic devices, correspondence and creative work.

Instrument IV, the Sibling Report, questioned siblings on the student's acts in the responding sibling's behalf, the sibling's acts in the student's behalf, the activities the student and responding sibling engaged in together, the responding sibling's idea of the student's vocational future, the responding sibling's own employment or vocational ambition and the age of the responding sibling.

Teacher marks and rating of attendance were compared for both experimental and control groups as of June, 1965 and June, 1967.

Certified psychologists visited each experimental and control student during pre-experimental and post-experimental periods. They administered Form II of the Wechsler Bellevue, collected figure drawings with post-drawing interrogation and interviewed the student on his use of free time, interests, hobbies, social activities and friends, and on his ideas of what he would like to be when he grows up. They also tape-recorded the student's description of a picture which contained detail of interest to adolescents and they tape-recorded the student's reading of a standard paragraph.

The figure drawings, post-drawing interrogation and verbatim recorded interviews were submitted to three certified psychologists for judging on the criterion variables of vocational ambition, social interest and feelings of self worth.

Rating scales were constructed by supervisors of speech, and each tape-recorded protocol was judged by three licensed supervisors of speech education.

The Metropolitan Reading Achievement tests and the Wide Age Range Arithmetic Achievement tests were administered to each student by the home instruction teacher in the pre- and post-experimental periods.

Interviews with teachers of the radio broadcast classes who conducted the School-to-Home telephone program were held by the director of the project in May, 1965 and in October, 1967 to determine if the experimental variable improved the teachers' ability to check learning and lesson planning.

RESULTS

1. Students Who Failed to Complete Participation in the Project

Of the forty-two students initially in the experimental group, it was possible to collect final data on only thirty. A brief description of the reasons for the elimination of each of the twelve excluded cases appears in Appendix A.

Of the thirty-three students initially in the control group, it was possible to collect final data on only twenty-three. A brief description of the reasons for the exclusion of each of the ten control students who were dropped from the project also appears in Appendix A.

The students excluded from the experimental and control groups did not reply to any attempts to make appointments for collection of final data.

2. Students Who Completed Participation in the Project

The Experimental Group. Thirty students, sixteen boys and fourteen girls, completed participation in the experimental group through to the final collection of post-experimental data. At the start of the project, February 7, 1966, they ranged in age from fourteen years, seven months to seventeen years, seven months, with a mean age of sixteen years, two months. The medical diagnoses of this group are muscular dystrophy (four students), other neurological disorders (six students), severe arthritis and/or bone conditions, including scoliosis, Stills' disease and osteomyelitis (six students), cerebral palsy (two students), cardiac disorder and vascular condition (two students), respiratory disorders, including asthma (four students), poliomyelitis (two students) and one student each for severe burns, visual defect, obesity and recurrent colds. They ranged in grade placement from nine through eleven. They ranged in Wechsler-Bellevue full scale IQ from

53 to 115 with a mean of 92.6.

The Control Group. Twenty three students, eight boys and fifteen girls, completed participation in the control group through to the final collection of post-experimental data. At the start of the project, February 7, 1966, they ranged in age from fourteen years, two months, to eighteen years, zero months, with a mean age of sixteen years, five months. The medical diagnoses of this group are muscular dystrophy (two students), other neurological disorders (two students), severe arthritis and/or bone conditions, including scoliosis, Stills' disease, osteomyelitis (three students), cerebral palsy (three students), respiratory disorders (four students) poliomyelitis (three students, and one student each for nephritis, blood disorder, diabetes, rheumatic fever, stomach pains, congenital disorder, and hypothyroid. They ranged in grade placement from nine to eleven. They ranged in Wechsler-Bellevue full scale IQ from 37 to 124 with a mean of 87.7.

Both the experimental and control groups who completed participation are similar in age, general ability and diversity of medical diagnoses.

The remainder of the findings to be presented will be those obtained from the thirty experimental and the twenty three control students for whom initial and final data are available.

3. Intellectual Development

The Wechsler-Bellevue Scale was administered to the forty two students in the experimental group and to thirty two of the thirty three students in the control group[6] by New York State certified psychologists in the pre-experimental period between November, 1965 and February 1, 1966. The sub-tests included were:

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[6] One youngster in the control group from a bi-lingual family (Greek) whose cerebral palsy prohibited the use of arms or legs and interfered seriously with speech, was given the Peabody Picture-Vocabulary Test instead of the Wechsler-Bellevue. His quotient was sixty nine and placed him in the first percentile. This score was regarded by the psychologist as minimal because this boy's handicaps mandate extreme variability in any given test situation. Since any score obtained on him would be subject to more than the usual amount of error, it was decided to omit his intelligence quotient from the calculations. On re-test in May, 1967, the boy's quotient on the Peabody Picture-Vocabulary Test was seventy-five, placing him in the third percentile.

Verbal	Performance
Information	Picture Completion
Completion	Picture Arrangement
Arithmetic	
Digit Repetition	Block Design
Similarities	
Vocabulary	Digit Symbol

The mean full scale quotient for the experimental group was 92.6 and for the control group it was 87.7. The difference of 4.9, submitted to a t-test, resulted in a t of .18, which is not significant at the .05 level of confidence. Thus the experimental and control groups are judged to be initially equated in intellectual ability as measured by the Wechsler-Bellevue Scale.

The mean verbal quotient for the experimental group was 96.7 and the mean verbal quotient for the control group was 92.0. When submitted to a t-test, the difference of 4.7 yielded a t of .16 which is not significant at the .05 level of confidence. The mean performance quotient for the experimental group was 88.5 and for the control group it was 83.7. The difference of 4.8 yielded a t of .179 which is not significant at the .05 level of confidence.

There are similarly no real differences between the experimental and control groups on a pre-test basis in any of the Wechsler-Bellevue sub-test scores obtained.

The Wechsler-Bellevue Full Scale was re-administered to the thirty students who continued to participate in the experimental group and to twenty two of the twenty three students who continued participation in the control group[7] by New York State certified psychologists in the post-experimental period of May and June,1967. The sub-tests included were identical with those administered in the pre-experimental period between November, 1965 and February 1, 1966. The mean full scale quotient for the experimental group was 98.1 and for the control group it was 91.7. The difference of 6.4 resulted in a t of .22 which is not significant at the .05 level of confidence. Thus, the experimental and control groups remained equal in intellectual ability as measured by the Wechsler-Bellevue scale, and the experimental variable cannot be said to contribute to gain in intellectual growth.

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[7] See footnote 6, p.7

The mean verbal quotient for the experimental group was 98.7 and the mean verbal quotient for the control group was 95.6. The difference of 3.1 resulted in a t of .109 which is not significant at the .05 level of confidence.

The mean performance quotient for the experimental group was 96.2, and the mean performance quotient for the control group was 89.8. The difference of 6.4 resulted in a t of .23 which is not significant at the .05 level of confidence.

Table I presents a comparison of Wechsler-Bellevue full scale mean quotients.

TABLE I

RESULTS OF t-TEST COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS ON FULL SCALE WECHSLER-BELLEVUE BEFORE AND AFTER THE EXPERIMENTAL PROGRAM.

Group	Test	N	M	t	P
Experimental	Initial 1966	42	92.6	.18	(n.s.)
Control	Initial 1966	32	87.7		
Experimental	Final 1967	30	98.1	.22	(n.s.)
Control	Final 1967	23	91.7		

As indicated in Table I, none of the observed differences between experimental and control pupils on the full-scale Wechsler-Bellevue, before or after experimental treatment, differed significantly.

There are similarly no real differences between the experimental and control groups on a post-experimental test basis in any of the Wechsler-Bellevue subtest scores obtained.

Table II presents a comparison of Wechsler-Bellevue mean Subtest Scores for 1966, and Table III presents the same data for 1967.

TABLE II

COMPARISON OF WECHSLER-BELLEVUE MEAN SUBTEST SCORES OF EXPERIMENTAL AND CONTROL GROUPS ON PRE-TEST AND POST-EXPERIMENTAL BASIS - 1966

	Mean Experimental	Mean Control	t	P
Information	7.1	7.7	.26	n.s.*
Comprehension	10.1	10	.40	n.s.
Arith.Computation	7.3	7	.11	n.s.
Digit Span	8.3	7.1	.9	n.s.
Similarities	9.0	8.7	.11	n.s.
Vocabulary	9.2	9.8	.22	n.s.
Picture Completion	8.7	8.3	.15	n.s.
Picture Arrangement	9.3	8.3	.36	n.s.
Block Design	8.1	7.7	.15	n.s.
Digit Symbol	8.3	8.7	.15	n.s.

TABLE III

COMPARISON OF WECHSLER-BELLEVUE MEAN SUBTEST SCORES OF EXPERIMENTAL AND CONTROL GROUPS ON PRE-TEST AND POST-EXPERIMENTAL BASIS - 1967

	Mean Experimental	Mean Control	t	P
Information	8.5	8.2	.11	n.s.
Comprehension	11	9.6	1.09	n.s.
Arith.Computation	7.8	6.9	.37	n.s.
Digit Span	8.8	6.9	.70	n.s.
Similarities	9.6	9.2	.13	n.s.
Vocabulary	9.9	8.8	.34	n.s.
Picture Completion	10.6	9.3	.41	n.s.
Picture Arrangement	10	8.6	.45	n.s.
Block Design	9.8	8.9	.29	n.s.
Digit Symbol	9.4	8.9	.21	n.s.

*not significant at the .05 level of confidence.

Reference to Tables II and III indicates that none of the comparisons of means on subtest scores proved to be statistically significant. Standard deviations were not computed because pooled estimate of variance was used in the statistical analysis.

4. Academic Development

Reading Achievement. The Metropolitan Achievement Reading Tests were administered to each of the thirty students in the experimental group and to the twenty-three students in the control group in January, 1966, and in May, 1967 by the home instruction teacher who regularly visited the student. Twelve of the students in the experimental group and eight of the students in the control group were judged by their home instruction teachers to be reading below the ninth grade level in November, 1965. These students were given the Metropolitan Achievement Advanced Reading Test, Form A on a pre-test and post-test basis. The remaining eighteen experimental and fifteen control students, who were judged to be reading above the ninth grade level, were given the Metropolitan High School Reading Test. Teacher judgment of reading achievement level ranged from a grade level of 2.1 to 12.3 for the experimental group and a grade level of 3.0 to 11.5 for the control group.

The poorer readers who took the Metropolitan Advanced Reading Achievement Comprehension test obtained initial raw scores of 19.61 for the experimental group and 24.77 for the control group. The difference in mean raw scores of 5.16 yielded a t of 1.25 which is not significant at the .05 level of confidence. The post-test mean raw score for the experimental group was 18.00 and for the control group was 24.33. Neither the experimental group nor the control group gained in mean reading comprehension raw score during the experimental period. The difference between the two post-test means of 6.33 yielded a t of 1.34 which is not significant at the .05 level of confidence. See Table IV.

TABLE IV

METROPOLITAN ADVANCED READING ACHIEVEMENT-COMPREHENSION
COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS
PRE-TEST AND POST-TEST

	Experimental		Control		Difference		Significance
	Mean	S.D.	Mean	S.D.		t	
Pre-test	19.61	8.38	24.77	9.81	5.16	1.25	n.s.
Post-test	18.00	9.69	24.33	11.04	6.33	1.34	n.s.

The better readers who were given the Metropolitan High School Reading Achievement Test attained initial mean raw scores of 19.08 for the experimental group and 22.55 for the control group. The difference of 3.48 in mean raw scores yielded a t of 1.03 which is not significant at the .05 level of confidence. The final mean raw score for the experimental group was 22.54 and for the control group it was 27.11. The difference of 4.57 yielded a t of 1.49 which is not significant at the .05 level of confidence. Both the experimental and control groups made some gains in reading. There was no evidence of significantly greater improvement in reading scores for the experimental group.

TABLE V

METROPOLITAN HIGH SCHOOL READING ACHIEVEMENT-COMPREHENSION SCORES COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS PRE-TEST AND POST-TEST

	Experimental		Control		Difference	t	Significance
	Mean	S.D.	Mean	S.D.			
Pre-test	19.08	8.38	22.55	7.66	3.48	1.03	n.s.
Post-test	22.54	7.53	27.11	5.66	4.57	1.49	n.s.

Arithmetic Achievement. The Wide Age Range Arithmetic Achievement Test was administered to each of the thirty students in the experimental group and to the twenty-three students in the control group in January, 1966 and in May, 1967 by the home instruction teacher who regularly visited the student.

Initial grade scores ranged from 3.6 to 12.3 for the experimental group and from 2.2 to 12.3 for the control group.

Initial mean grade scores were 7.30 for the experimental group and 6.51 for the control group. The difference of .79 yielded a t of 1.20 which is not significant at the .05 level of confidence. The final mean grade score for the experimental group was 7.32 and for the control group was 7.18. The difference of .14 yielded a t of .25 which is not significant at the .05 level of confidence. These results may be seen in Table VI. The experimental and control groups do not differ significantly in arithmetic achievement on either a pre-test or post-test basis.

TABLE VI

WIDE AGE RANGE ARITHMETIC ACHIEVEMENT TEST COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS - PRE-TEST AND POST-TEST

	Experimental		Control		Difference	t	Significance
	Mean	S.D.	Mean	S.D.			
Pre-test	7.30	2.34	6.51	2.31	.79	1.20	n.s.
Post-test	7.32	2.77	7.18	2.91	.14	.25	n.s.

5. Students Who Returned to Regular School

One of the goals of Home Instruction in the New York City school system is the rehabilitation of the students, making possible their return to regular school. Accordingly, the five students who returned to school are described in Appendix B, so that the reasons for their return may be understood. The initial and final data on the students who returned to regular school are included in the results reported for the entire group.

6. Attendance

Students assigned to home instruction receive four visits a week from a home instruction teacher. In official attendance records the student is counted present if the teacher makes the visit and is received, and absent if this does not obtain.

For comparison purposes in this experiment, attendance records for the control and experimental students for the term ending June, 1965, which was the term preceding the experiment, were used as base line data. Attendance records for the term ending June, 1967, which was the term in which the experimental variable ended, were compared with those obtained in June, 1965 for both experimental and control groups.

In the term ending June 30, 1965, the students in the experimental group averaged 2.5 days absence, and the students in the control group averaged 3.8 days absence. The difference of 1.3 submitted to a t-test yielded a t of .76, which is not significant at the .05 level of confidence. Thus, the groups were judged to be initially equated in attendance.

For the term ending June 30, 1967, the experimental group had 6.1 days average absence and the control group had 3.06 days average absence. While the experimental group had more absences than the control group, the difference of 3.04 resulted in a t of 1.39 which is not significant at the .05 level of confidence.

7. Teacher Marks

The home instruction teachers were not informed that their marks would be used as part of this research. The marks they recorded for the experimental and control students for the term ending June 30,1965, the term preceding the experiment, were compared with the marks recorded by home instruction teachers for the same students for the term ending June, 1967, which was the final term of the experimental variable.

Marks were obtained for English, social studies, mathematics and science.

In June, 1965 the experimental group averaged 74.64 in English and the control group averaged 76.80. In June, 1967 the experimental group had an average mark of 75.00 in English, reflecting a gain of .36 which is not significant. The control group remained exactly the same; their average mark in English was 76.80

The social studies average mark given the experimental students in 1965 was 74.20 and that given the control students was 76.20. In 1967 the experimental students had an average social studies mark of 73.00 and the control students an average mark of 73.80. Neither group improved in teacher marks and the differences between them were not significant.

The mathematics average mark given the experimental students in 1965 was 77.40 and that given the control students was 78.90. In 1967 the experimental students had an average mathematics mark of 74.70 and the control students an average mark of 77.40. Neither group improved in marks and the differences between initial and final averages were not significant.

The science average mark of the experimental students in June,1965 was 76.50 and that of the control students was 77.56. In June, 1967, the experimental students had an average science mark of 78.12 and the control students an average mark of 74.50. There was a slight gain for the experimental group, while there is a slight loss for the control group. Science (biology) was one of the subjects taught by School-to-Home Telephone.

However, the difference of 1.62 in 1967 marks submitted to a t-test, yielded a t of .84 which is not significant at the .05 level of confidence.

To sum up, it is seen that the experimental and control groups did not differ significantly in teacher marks at the beginning of the experiment, and the differences between them after the experimental variable ended were not significant.

Table VII presents a summary of average teacher marks given control and experimental students in the term preceding the experiment and in the term the experimental variable ended.

TABLE VII

END TERM TEACHER MARKS OF EXPERIMENTAL AND CONTROL GROUPS BEFORE AND AFTER THE EXPERIMENTAL PROGRAM

	1965		1967	
	Experimental	Control	Experimental	Control
English	74.64	76.80	75.00	76.80
Social Studies	74.20	76.20	73.00	73.80
Mathematics	77.40	78.90	74.70	77.40
Science	76.50	77.56	78.12	74.50

8. Speech

Speech was recorded for each student in the experimental and control group by means of a tape recorder which was carried to the student's home by the psychologist who did the psychological testing on a pre-experimental and post-experimental basis. Both times the speech was recorded, the student was asked to read a standard selection[8] and was asked to tell about a standard picture[9] carried by the psychologist.[10]

Two supervisors of instruction in speech used a rating scale which tontained ratings on attitudes, rate and fluency, voice, articulation and pronunciation and general use of language.

Reliabilities studies were done on the agreement of the two raters in each of the aforementioned areas, using a product moment correlation. The following correlations were obtained:

Attitudes r = .899
Rate and Fluency r = .849
Voice r = .830
Articulation and Pronunciation r = .930
General Use of Language r = .860
Overall Impression of Speech r = .890

Attitude to Speech. At the beginning of the experiment the combined median rating in attitude to speech for the experimental and control groups was 3.69. Seventeen of the experimental students and thirteen of the control students were rated above the median. A chi square of .27 was not significant at the .05 level of confidence. Thus, the experimental and control groups are seen to be equated in attitudes toward speech on a pre-test basis. After the experiment, the combined median was 3.75. Twenty-one of the experimental students and eighteen of the control students were found to be above the median. A chi square of .25 was not significant at the .05 level of confidence.

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[8] See Appendix for selection used.

[9] The picture of appeal to adolescents showed two young couples celebrating a birthday party in a dinette adjacent to a very modern kitchen.

[10] A copy of the scale appears in the Appendix

Rate and Fluency. At the start of the experiment the combined median rating in rate and fluency of speech for the experimental and control groups was 3.65. Nineteen of the experimental students and twelve of the control students were rated above the median. A chi square of .018 was not significant at the .05 level of confidence.

After the experiment the combined median was 3.70. Twenty of the experimental students and seventeen of the control students were found to be above the median. A chi square of .011 was not significant at the .05 level of confidence.

Voice. At the beginning of the experiment the combined median rating in voice for the experimental and control groups was 3.70. Twenty of the experimental and fourteen of the control students were rated above the median. A chi square of .020 was not significant at the .05 level of confidence.

On a post-experimental basis, the combined median was 3.63. Nineteen students from the experimental group and fifteen students from the control group were rated above the median. A chi square of .050 was not significant at the .05 level of confidence.

Articulation and Pronunciation. At the inception of the experiment the combined median rating for articulation and pronunciation for the experimental and control groups was 3.72. Twenty-two of the experimental and sixteen of the control students were found to be above the median. A chi square of .160 was not significant at the .05 level of confidence.

On a post-experimental basis, the combined median rating for articulation and pronunciation was 3.80 for the experimental and control groups. Twenty-three of the experimental and seventeen of the control students were rated above this median. A chi square of .180 was not significant at the .05 level of confidence.

Language. At the start of the experiment the combined median in general use of language was 3.67. Six of the experimental students and four of the control students were rated above the median. A chi square of .430 was not significant at the .05 level of confidence.

On a post-experimental basis, the combined median rating for general use of language was 2.90. Twenty-two of the experimental and sixteen of the control students were rated above the median. A chi square of .020 was not significant at the .05 level of confidence.

Vocabulary. At the beginning of the experiment the combined median rating for vocabulary was 3.68. Eleven of the experimental students and nine of the control students were rated above the median. A chi square of .0046 was not significant at the .05 level of confidence.

On a post-experimental basis, the combined median rating for vocabulary was 3.55. Sixteen experimental students and twelve control students were rated above the median. A chi square of .001 was not significant at the .05 level of confidence.

Grammatical Structure. At the beginning of the experiment, the combined median rating for grammatical structure was 3.45. Eighteen of the experimental groups and thirteen of the control group were rated above the median. A chi square of .0000025 was not significant at the .05 level of confidence.

On a post-experimental basis, the combined median rating for grammatical structure was 3.45. Twenty-two experimental students and fourteen control students were rated above the median. A chi square of .590 was not significant at the .05 level of confidence.

Overall Impression. At the start of the experiment, the combined median rating for overall impression of speech was 2.85. Eighteen experimental students and thirteen control students were rated above the median. A chi square of .0000025 was not significant at the .05 level of confidence.

On a post-experimental basis the combined median rating for overall impression of speech was 2.92. Twenty-four experimental students and fourteen control students were rated above the median. A chi square of .350 was not significant at the .05 level of confidence.

On the basis of the foregoing comparisons, it is evident that there was no significant difference between the experimental and control groups at the beginning of the experiment on any of the ratings made with the speech scales. Further, when the experimental and control groups were compared at the close of the experimental period, there was no significant difference on any of the rated aspects of speech.

9. Social Emotional Development

Instruments Used. Several approaches were used to develop an understanding of the student's feelings of self-worth, ambitions and social interests. For all three of these facets of personal development, a structured interview was conducted with each of the thirty experimental and twenty-three control students, and recorded verbatim by a New York State certified psychologist. The areas investigated in the interview were:

> Use of free time, interests, hobbies, social activities and friends.
>
> Ideas of what he would like to be when he grows up.

A panel of three other certified psychologists, by consensus, formulated a series of graded categories within such concepts as vocational ambition and social interest. A second panel of three certified psychologists, independent of those who established the categories, judged each student's interview protocol on the rating scale devised by the previous panel. A copy of the rating scale is appended.

Feelings of self-worth and social interests were also evaluated by means of figure drawings which were administered to the thirty experimental and twenty-three control students by a certified psychologist.[11]

A panel of three other psychologists, by consensus, formulated a series of graded categories within the concepts of self-worth and social interest. A second panel of three certified psychologists, independent of those who established the categories, judged each student's figure drawing protocol on the rating scale devised by the previous panel. A copy of the rating scale is appended.

The same three judges were used for both the rating of the interviews and the rating of the figure drawings. The range of inter-rater reliability was from .992 to .31. The average Rho for both instruments is .73. The obtained Rhos are as follows:

Rater A and all others on the pre-test instruments	.992
Rater A and all others on the post-experimental instruments	.31
Rater B and all others on the pre-test instruments	.98
Rater B and all others on the post-experimental instruments	.43
Rater C and all others on the pre-test instruments	.78
Rater C and all others on the post-experimental instruments	.89

The interview and figure drawing protocols were coded for name and date of administration.

Social interest, vocational ambition and motivational factors, as well as the assumption of personal responsibility, were measured by means of questionnaires sent to the home instruction teachers, the parents and the siblings of the experimental and control students. Copies of these instruments are appended.

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[11] The questions were: 1.Age of person drawn. 2. Story.3. What does person enjoy? 4.What is person afraid of? 5. What is person doing?

Social Interests - Teacher Ratings. The home instruction teachers rated the experimental and control students assigned to them on social interests on two items which indicate whether the student goes to activities arranged by the Home Instruction Department and whether or not the student has friends among other home instruction students. On a pre-experimental basis, a total of twenty-two items were rated positively and sixteen negatively for the nineteen students in the experimental group for whom this data was available. For the nine control students for whom this data was available, there were twelve positive and six negative items. A chi square of .39 was not significant at the .05 level of confidence. In the pre-experimental condition the frequency of negative and positive responses is not contingent on being in the experimental or control group.

On a post-experimental basis there were thirty-seven positive and six negative ratings for the experimental group. For the control group there were ten positive and eight negative ratings. A chi square of 5.31 was significant at the .05 level of confidence. For the post-experimental period the frequency of positive and negative responses is not independent of whether the subject is in the experimental or control groups. Thus, the experimental variable is judged to have had a positive effect on social interest as rated by the Home Instruction teacher.

Social Interests - Parent Ratings. The parents scored their children yes or no on sixteen items[12] which pertained to activities outside the home. The number of items rated "yes" were totaled for the experimental and control groups, and similarly the number of items rated "no" were totaled for each group.

On a pre-experimental basis there was a difference between the groups in that the experimental students are said to pursue more activities out of the home than do the control students. The mean number of activities engaged in by the experimental students was 6.86, while it was only 5.31 for the control students. The amount of severe handicap was equal in both groups.

On a post-experimental basis the mean number of activities was 7.81 with a gain of .95 for the experimental students, as opposed to 5.77 with a gain of .46 for the controls.

Because of the initial differences, the amount of gain between the pre- and post-experimental periods was tested by an analysis of co-variance. A co-variance t of 2.03 is required for significance of the difference in gain at the .05 level. For significance, the adjusted final mean scores would have to differ by 1.29, but the difference between the adjusted scores of the experimental and control students is .83. Thus, the difference in gain is not significant although the direction towards gain in social interest is consistent with the teachers' rating of gain in this dimension.

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[12] Questions 17 - 32 on Parents' Questionnaire

Eleven of the control students and thirteen of the experimental students gained in number of activities outside the home as reported by the parents.

The direction of change in activity for the experimental group as they are described by their parents is towards more outside activities, even though the difference in gain between the experimental and control students is not significant.

Social Interests - Interview and Figure Drawing. The structured interview and figure drawing tests individually administered to the students of the experimental and control groups by certified psychologists were also used as measures of social interest. The interview test was rated by independent judges who were certified psychologists on a twelve-item scale for social interest, and these scores were available on a pre- and post-experimental basis for twenty-three experimental and sixteen control students.

The scores given by the certified psychologists who acted as judges were summed for this scale of twelve items. For each student a score was obtained on a pre-experimental and a post-experimental basis and the difference was obtained between the pre-experimental and post-experimental scores. A difference score which was either positive or negative was derived for each individual. The sum of twenty was added to each score in order to transform the negative scores. These difference scores were a reflection of relative gain in the dimension of social interest. The differences were summed for the experimental group and for the control group.

For the experimental group the mean difference was 44.26 with a standard deviation of 15.27 and a $S.E._M$ of 3.18. For the control group the mean difference was 45.00 with a standard deviation of 19.17 and a $S.E._M$ of 4.79. The difference in amount of gain occurringin the period between pre- and post-testing was compared for the experimental and control groups and yielded a t of .206, which is not significant at the .05 level.

Social interest was also measured, using figure drawing. The figure drawings of twenty-five experimental and sixteen control students were submitted to New York State certified psychologists who judged them on a seven-item scale. The scores were summed, and for each experimental and control student a pre-experimental and post-experimental score was obtained. The difference between the pre-score and post-score was obtained for each individual, thus giving a positive or negative difference score for each student.

The sum of twenty was added to each score to make them all positive for purposes of computation. Final difference scores were a reflection of relative gain in the dimension of social interest. A sum of these scores was obtained for the experimental group, and a sum was obtained for the control group. The mean experimental score was 32.68 with a standard deviation of 10.09 and a $S.E._M$ of 2.02. The difference in amount of gain occurring in the period of pre- and post-testing was compared for the experimental and control groups and yielded a t of 1.76 which is significant at the .05 level. The mean control score was 26.37 with a standard deviation of 12.04 and a $S.E._M$ of 3.01. The difference in amount of gain occurring in the period between pre- and post-testing was compared for the experimental and control groups and yielded a t of 1.76 which is significant at the .05 level. The projective technique of figure drawing, judged by experienced clinicians, reflected a change in personality in the direction of greater social interest.

Feelings of Self-Worth. The figure drawing test, individually administered to the students of the experimental and control groups by certified psychologists, was also used as a measure of feelings of self-worth. The figure drawing test was rated by independent judges, who were certified psychologists, on a seven-item scale for self-worth, and these scores were available on a pre- and post-experimental basis for twenty-three experimental and sixteen control students.

The scores given by the certified psychologists who acted as judges were summed for this scale of seven items. For each student a score was obtained on a pre-experimental and a post-experimental basis and the difference was obtained between the pre-experimental and post-experimental scores. A difference score which was either positive or negative was derived for each individual. The sum of twenty was added to each score in order to transform the negative scores. These difference scores were a reflection of relative gain in the dimension of feelings of self-worth. The differences were summed for the experimental and the control groups.

For the experimental group the mean difference was 22.17 with a standard deviation of 9.94 and a $S.E._M$ of 2.07. For the control group the mean difference was 19.0 with a standard deviation of 9.1 and a $S.E._M$ of 2.27. The difference in amount of gain occurring in the period between pre- and post-testing was compared for the experimental and control groups and yielded a t of 1.04, which is not significant at the .05 level. Thus, the experimental and control groups are judged not to differ in the dimension of feelings of self-worth, as indicated by the figure drawings. As a corollary to feelings of self-worth, the teachers rated the personal hygiene of their students on a five-point scale on a pre-experimental and post-experimental basis. A pre-experimental and post-experimental score was obtained for thirteen experimental and nineteen control students. A mean difference was obtained for the experimental group, and a mean difference for the control group. The sum of five was added to each score to transform the negative scores. For the experimental group, the mean difference was 5.15 with a standard deviation of .77. For the control group, the mean difference was 4.95 with a standard deviation of .76. The difference between the mean gains yielded a t of .70 which is not significant at the .05 level of confidence. Thus, the experimental and control groups are judged not to differ in the dimension of personal hygiene as rated by the teachers.

Personal Responsibility. The assumption of personal responsibility is closely related to feelings of self-worth. The parents rated their children on eight items which pertained to personal responsibility. The data was available on a pre- and post-experimental basis for twenty-two students in the experimental group and sixteen students in the control group. The number of items rated positively were totaled for each group on a pre- and post-experimental basis. A difference was obtained for each group between the pre- and post-experimental means. The mean difference for the experimental group was 5.86 with a standard deviation of 1.54. The mean difference for the control group was 6.18 with a standard deviation of 1.9. A t-test of the difference between the mean gains yielded a t of .556, which is not significant at the .05 level of confidence. Thus, the experimental and control groups are judged not to differ in assumption of personal responsibility, as rated by the parents.

Care of Self and Things. The parents rated their children on five items which pertained to personal responsibility. This data is available on a pre- and post-experimental basis for twenty-two students in the experimental group and sixteen students in the control group. The number of items rated positively were totaled for each group on a pre- and post-experimental basis. A difference was obtained for each group between the pre- and post-experimental means. The mean difference for the experimental group was 4.9 with a standard deviation of 1.16. The mean difference for the control group was 5.25 with a standard deviation of 1.39. A t-test of the difference between the mean differences yielded a t of 1.14 which is not significant at the .05 level of confidence. Thus, the experimental and control groups appear to remain equated in the care of self and things, as rated by their parents.

Vocational Ambition and Motivation. Motivation and personal ambition were rated by the teachers on a nine item scale. Scores were available on a pre-experimental and post-experimental basis for twelve experimental and nineteen control students. A difference score between the pre-experimental and post-experimental period, which was either positive or negative, was derived for each individual. The sum of ten was added to each score to transform the negative scores. These difference scores were a reflection of relative gain in the dimension of motivation as rated by the home instruction teacher. The differences were summed for the experimental and control groups.

For the experimental group the mean difference was 9.75 with a standard deviation of 4.60. For the control group the mean difference was 12.68 with a standard deviation of 6.82. The difference in amount of gain occurring between the pre- and post-experimental periods was compared for the experimental and control groups and yielded a t of 1.27, which is not significant at the .05 level.

Ambition and motivation were also assessed by means of the structured interview administered by certified psychologists and judged by three other certified psychologists on a rating scale constructed by still another three certified psychologists working by consensus.

The scores given by the psychologists who acted as judges were summed for this scale of ten items. For each student a score was obtained on a pre-experimental and post-experimental basis and the difference was obtained between the pre-experimental and post-experimental scores. A difference score, which was either positive or negative, was derived for each individual. The sum of forty was added to each score in order to transform the negative scores. The difference scores were a reflection of relative gain in the dimension of vocational ambition and motivation. The differences were summed for the twenty-three experimental and seventeen control students on whom this data was available. For the experimental group the mean difference was 41.00 with a standard deviation of 14.16 and a $S.E._M$ of 2.9. For the control group the mean difference was 42.47 with a standard deviation of 20.80 and a $S.E._M$ of 5.07. The difference in amount of gain occurring in the period between pre- and post-testing was compared for the experimental and control groups and yielded a t of .25, which is not significant at the .05 level of confidence.

10. Reactions of Broadcast Teachers

Four teachers who are on the regular staff of High School of the Air were involved in the School-to-Home Telephone program. They followed up their broadcast lessons in the subject specialties of English, general science, biology, history and social studies through group telephone hook-up with the special students. Each teacher was previously experienced as a broadcast teacher for High School of the Air.

The teachers were interviewed in the spring of 1965 and again in the fall of 1967. Both times they were asked to discuss the preparation for the fifteen-minute broadcast lesson. They were also asked to discuss their ability to check what had been learned in the broadcast lesson and the planning of future lessons.

In the spring of 1965 all the teachers interviewed stressed the time pressure they felt because of the limited length of the broadcast lessons and all hoped that the ability to follow up the lesson, which would be provided by School-to-Home Telephone, would improve this dimension of their work.

In the initial interview, all four teachers expressed great frustration in planning lessons because they had few avenues through which to check previous learning. They were able to visit some students approximately once a year, and some written work was mailed to them. But the primary teaching responsibility rested with the home instruction teachers who make four visits a week to the homebound student. The High School of the Air program had always been regarded as supplemental.

In the fall of 1967 all four teachers continued to report a sense of time pressure in the broadcast lessons. It was pointed out that only a small proportion of the students reached by broadcast were included in the School-to-Home Telephone program, and thus the basic format of the broadcast lesson was not changed. All mentioned the need to cover a syllabus which is based on a six-period week for preparation for State Regents examinations as a pressure which was not relieved by the group telephone hook-up. One teacher did say that the group follow-up was a reminder not to get "carried away with intellectualism and presentation" as the student problems of learning how to study were constantly before him.

All the teachers preferred homogeneous grouping of the telephone group, rather than heterogeneous ability grouping, which had made their task very difficult. They stressed the drawbacks of weak student achievement and the lack of academic orientation. All four teachers stressed the social value of the program and the coordinating teacher commented, "It brought kids out of their shells."

The interviews with the High School of the Air staff revealed some mechanical and administrative problems. During the one-and-a-half year period there were thirty calls to repair service for the instrumentation. The telephone installation men had left the numbers on the bottom of each instrument so that each experimental student knew the number of the telephone installed. One enterprising student accepted reverse-charge long distance calls. The bill for this was accepted by the Telephone Company and the Board of Education was not made liable. However, a special agreement had to be worked out to ensure this. There were schedule conflicts between the telephone hook-up and the visits from the home instruction teacher. As often in the past, there were conflicts between home teacher visits and broadcast schedules.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

For the twelve experimental and ten control students who failed to complete participation in the project, certain common factors emerge. Chief among these was poor academic motivation. Among the experimental students in particular there was severe intellectual retardation which did not permit them feelings of comfort with their peers in the group. Severely incapacitating illness was another factor. Some were close to the age at which they would normally leave school when the project began and there was also the return to school of those whose medical problems were not as long in duration as the project.

Thirty experimental students ranging in age from fourteen years, seven months to seventeen years, seven months, with a mean age of sixteen years, two months, who were in grades nine, ten and eleven at the start of the project, completed their participation. There were sixteen boys and fourteen girls. Their Wechsler-Bellevue full-scale quotient ranged from 53 to 115 with a mean of 92.6.

Twenty-three control students ranging in age from fourteen years, two months to eighteen years, zero months, with a mean age of sixteen years, zero months, who were in grades nine, ten and eleven at the start of the project, completed their participation. There were eight boys and fifteen girls. Their Wechsler-Bellevue full-scale quotient ranged from 37 to 124 with a mean of 87.7.

Both experimental and control students were alike in the diversity of their medical diagnoses and were of similar age and general ability.

There were no significant initial differences between the experimental and control groups in intellectual development as measured by the Wechsler-Bellevue Scale for the measurement of Intelligence. In the post-experimental re-test no real differences were found between the experimental and control groups.

Reading scores as measured by the Metropolitan Achievement Reading tests were not significantly different initially for the control and experimental students. Post-experimental testing revealed that whether a student did well or poorly was not contingent upon whether he was in the control or experimental group.

Initially, there was no significant difference between experimental and control groups in arithmetic scores obtained on the Wide Range Achievement and Arithmetic Test. Post-experimental re-test indicated no significant difference between control and experimental students.

Return to regular school is looked upon by home instruction teachers as rehabilitative success. Of the four experimental students who returned to school during the course of the project, one went to college where she did well, one went to a special school for the cerebral palsied and did acceptably, one went to a high school where his success was marginal, and another returned to high school where he failed three subjects his first term.

School attendance, as evidenced by number of times out of a four-times-a-week schedule that the home instruction teacher did not meet with his students, was averaged for both groups for the term ending June,1965 and for the term ending June,1967. Initially, there was no significant difference between the experimental and control groups. While the experimental group had numerically more absences for the period from February 1 through June 30,1967, the difference between the experimental and control groups was not statistically significant.

Teacher marks were obtained in English, social studies, mathematics and science for the terms ending June,1965 and June, 1967. Neither group showed improvement in teacher marks, and the differences between them in the pre- and post-experimental school terms were not statistically significant.

The speech of the experimental and control students was tape recorded by a clinical psychologist who asked each student to read a standard paragraph and to tell what was happening in a standard picture. Two supervisors of speech instruction rated each recording on a seven-point scale for each of the following: attitudes, rate and fluency, voice, articulation and pronunciation, general use of language including vocabulary and grammatical structure, and overall impression of speech. The median ratings for the experimental and control groups were compared by means of a chi square test, both at the beginning and at the end of the experimental period. No significant differences were found between the experimental and control groups.

Feelings of self-worth, ambition and motivation, personal responsibility, care of self and things, and social interests were rated by teachers and parents, and also were obtained through structured interviews and figure drawings secured by clinical psychologists.

The experimental and control groups were compared as to feelings of self-worth by means of ratings of figure drawings by clinical psychologists. Both at the start of the experiment and at the end of the experimental period there were no significant differences between the experimental and control groups.

Similarly, there were no significant differences between the experimental and control groups, either in the pre-experimental or post-experimental periods, on any of the following measures:

Teacher ratings of personal hygiene
Parent ratings of personal responsibility
Teacher ratings of vocational ambition and motivation
Parent ratings of care of self and things
Psychologists ratings of ambition and motivation.

Social interest was measured in a variety of ways, and the results differed, suggesting that this is a complex variable.

The parents of experimental and control students rated sixteen social activities as practiced and not practiced. Initially, the experimental students pursued more activities than the control students, and appeared to have made a greater gain in number of activities pursued. Tested by analysis of covariance, the difference in gain in favor of the experimental group was not significant.

The students themselves, in a structured interview with a psychologist, which was rated by other psychologists for social interest, gave information about their social activities. The mean difference between the pre- and post-experimental periods was compared for experimental and control groups by means of a t-test and was found to be not significant.

The ratings of home instruction teachers on the number of friends among other students, and on attendance at home instruction social functions, on the basis of a chi square comparison, were initially equated for the experimental and control groups. On post-experimental analysis there was a statistically significant difference in favor of the experimental group.

The projective technique of figure drawing, administered by a psychologist to experimental and control students, was rated for social interests by other psychologists who served as judges. Final difference scores showed gain in social interests in favor of the experimental group which, when analyzed by means of a t-test, was significant at the .05 level of confidence.

Thus, using a clinical technique, improvement in personality orientation towards increased social interest was established for the experimental group in comparison to the control group. It may be observed that projective techniques often reveal a trait tendency before total personality assimilation permits behavior change.

Interviews with the coordinator of High School of the Air and the broadcast teachers revealed that the new method of School-to-Home Telephone did not relieve their sense of time pressure engendered by the brief fifteen-minute broadcast lessons nor did it help in lesson planning to be able to check learning by group telephone, because the School-to-Home telephone group was only a small part of the student broadcast audience. They continued to feel pressure in their broadcast lessons to cover the regular State Regents syllabus. They mentioned difficulties stemming from the divided pedagogical responsibilities since a major part of instruction was carried out by the students' home instruction teachers. The broadcast teachers recommended that telephone instruction be an integral part of the educational program for the homebound student rather than a supplemental part.

They mentioned scheduling problems due to the three types of instruction each student received, namely, broadcast group telephone and home visit. They also pointed out that under the experimental program the expensive telephone instrumentation was in service for only twelve hours a week and that more efficient use should be made of it. The teachers interviewed recommended homogeneous grouping of students for group telephone instruction because the problems involved in heterogeneous grouping are insurmountable when students are not physically present in an actual classroom in which simultaneous projects can be carried on at different levels.

SUMMARY

Intellectual, academic and social-emotional development were compared for physically handicapped, homebound adolescent control and experimental students with whom a method of combined instruction was tried for fifteen months. The method utilized radio broadcasts, group telephone hook-up with subject specialist broadcast teachers, and regular visits from home instruction teachers.

The students were the whole Brooklyn, New York population of the physically handicapped with long-term homebound expectancy in grades nine, ten and eleven. Students were assigned to experimental and control groups by toss of a coin.

Methods of measurement and evaluation used before and after the experiment included individual psychological examination and interview, speech recordings, standardized achievement tests and questionnaires submitted to parents and teachers. Consultants judged social-emotional factors and speech. Where applicable, t-tests and analysis of covariance were used to determine statistical significance of differences. The thirty experimental and twenty-three control students showed no significant differences on a pre-test or post-test basis in intellectual or academic development including speech, or in social maturity. There was a significant personality change in the experimental group in that the students gave evidence of a more positive orientation towards social interest. The social interest, however, was not reflected in behavioral change.

Those who dropped out before completion of the project either lacked motivation, were below average in intellectual potential, were close to completion of their academic careers because of age rather than grade placement, or improved sufficiently in health to return to school.

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APPENDIX A

Students Who Failed to Complete Participation in the Project

Students Who Failed to Complete Participation in the Project

Experimental Students

Experimental Case 1

A boy whose full scale Wechsler-Bellevue quotient was ninety-two, was involved in the group telephone hook-up only five times. His home instruction teacher, who was visiting the home four times a week, informed the research staff that the boy would not be a good subject because he frequently was not at home, seemed evasive, and was involved with a weekend motorcycle group. The medical diagnosis for this student was lacerations of the kidney with unpredictable attacks. The group telephone hook-up was disconnected exactly three months after the project began.

Experimental Case 2

A fifteen-year old girl whose medical diagnosis was epilepsy and whose full scale Wechsler-Bellevue quotient was fifty-one. There was a language handicap; she is of Puerto Rican origin. Although she participated the full fifteen months in the group telephone hook-up neither she nor her family replied to any attempts to get appointments made for the collection of final data.

Experimental Case 3

A boy,sixteen years, nine months in age, whose full scale Wechsler-Bellevue quotient was sixty-nine, never answered the telephone when the High School of the Air teacher called. The mother always answered it and said the boy was "too nervous." The home instruction teacher who visited four times a week, stated that this boy read only at the fourth grade level and had never been able to follow the High School of the Air lessons. The possibility that exists is that this student did not participate because of felt academic inadequacies.

Experimental Case 4

A girl, fourteen years, four months in age at the start of the project, whose Wechsler-Bellevue full scale quotient was seventy. The test patterning was suggestive of organic involvement of the central nervous system and she was on home instruction because of daily seizures. The girl was very heavily medicated and her home instruction teacher who visited regularly said that although her effort was excellent, she was extremely shy and very easily embarrassed. The family was of very low socioeconomic status. After a brief period, the girl stopped participating in the group telephone hook-up. The girl's shyness, intellectual and educational retardation probably contributed to her withdrawal. Again, a Wechsler-Bellevue full scale quotient appears which is considerably lower than the 92.6 which was the mean quotient for the experimental group as a whole on pre-test.

Experimental Case 5

A boy who was sixteen at the start of the project and whose Wechsler-Bellevue full scale quotient was 101, had a very serious scoliosis. The head set which was initially installed for his use was removed in favor of a speaker phone, but even with this accommodation the boy was too weak to continue participation.

Experimental Case 6

A seventeen-year boy whose Wechsler-Bellevue full scale quotient was 101, never participated because it was necessary for him to go to a physical therapy clinic three days a week.

Experimental Case 7

A girl of seventeen whose full scale Wechsler-Bellevue quotient was 110, was placed upon home instruction because of sinusitis. After six weeks the grandmother, with whom she lived, requested that the telephone be disconnected because the student had severe headaches, dizzy spells and chronic colds. This girl had participated in the group telephone hook-up only once.

Experimental Case 8

A sixteen and-a-half year old boy whose Wechsler-Bellevue full scale quotient was 113, never used the telephone because his hernia had healed in time for him to return to high school during the initial month of the experimental effect.

Experimental Case 9

A boy, age sixteen, eight months when the project began, whose Wechsler-Bellevue full scale quotient was 102, participated in the group telephone hook-up for three days and then entered full-time employment.

Experimental Case 10

A young man, twenty-and-a-half when the project began, whose Wechsler-Bellevue full scale quotient was 119, had the school-to-home telephone installed next to his hospital bed as he was there for surgical procedures and physical therapy due to a bad accident. He was married and went to his parental home for weekends. It was his aim to complete his high school education but he participated in the group telephone hook-up for only a month, perhaps because his interests were different from those of the other students. A year later, he completed his high school studies and was discharged from home instruction.

Experimental Case 11

A girl, age sixteen and-a-half when the project began, whose Wechsler-Bellevue full scale quotient was ninety-five, did not participate in the group telephone hook-up for more than three weeks. Her psychological examination revealed an unusual amount of fantasy and at seventeen years, four months of age, with her parents' consent, she discontinued her education and was no longer on the register of home instruction.

Experimental Case 12

A girl, sixteen years, eight months at the start of the project, whose Wechsler-Bellevue full scale quotient was eighty-six, with a diagnosis of diabetes, who dropped out after a few weeks complaining about the earphones. The offer to substitute a speaker phone was rejected. The girl remained on home instruction until she received a high school diploma in January, 1967 at the age of eighteen and eight months.

Control Case 1

A boy, sixteen years, ten months of age with a Wechsler-Bellevue full scale quotient of fifty, suffered from severe muscular dystrophy, had unintelligible speech and was difficult to reach because the parents were separated.

Control Case 2

A girl, eighteen years, three months of age with a Wechsler-Bellevue full scale quotient of 103, was placed on home instruction because of a fever of undetermined origin. Her academic achievement was slightly above average. Although the girl and her family permitted collection of initial data, they refused to permit any further interviews and did not return questionnaires. Telephone conversations with the girl and her mother suggested the presence of extreme anxiety in the daily life situations.

Control Case 3

A boy, age fifteen years, with a Wechsler-Bellevue full scale quotient of 113, whose diagnosis was arthritis and who had no use of his hands, but who was described as a good student, died shortly after the project began.

Control Case 4

A girl, age fifteen years, eleven months at the start of the project, with a Wechsler-Bellevue full scale quotient of seventy-one, whose diagnosis was severe seizure states required the presence of a parent or adult at all times because of the intensity and frequency of the seizures. During the initial psychological examination, she was described as easily frustrated and upset. The following term, at the age of sixteen and-a-half, with parental consent, she discontinued her education and was dropped from the home instruction register.

Control Case 5

A girl, age fifteen years, nine months whose Wechsler-Bellevue full scale quotient was 104, had a diagnosis of scoliosis. The family was of high socioeconomic status, gave excellent cooperation in the collection of initial data but moved to a suburb soon after the project began.

Control Case 6

A boy, age sixteen years, ten months with a Wechsler-Bellevue full scale quotient of 93, was difficult to reach for the collection of initial data. The diagnosis was muscular dystrophy and the boy was very dependent upon his mother as he was in a wheelchair and had extreme difficulty in reaching for materials. The father was dead, the family on welfare and the mother eventually moved to a suburb to care for a married daughter who developed carcinoma.

Control Case 7

A girl, age fifteen years, five months with a Wechsler-Bellevue full scale quotient of eighty-three, had a diagnosis of nervous cough and was described by her home instruction teacher as mature for her age. Although her reading was three years' retarded, she could understand science and social studies at her grade level. At the age of sixteen and-a-half, with parental consent, she secured working papers and left home instruction.

Control Case 8

A girl, age nineteen and two months with a Wechsler-Bellevue full scale quotient of fifty-five, impaired speech and a psychological test pattern suggestive of severe organic deficit, had been placed on home instruction because of congenital deformity. There was no finger development in her left hand and three fingers of the right hand were undeveloped. Her family was upper middle class socioeconomic status, cooperated during initial data collection but before she was twenty this girl discontinued her education and was removed from the home instruction register.

Control Case 9

A boy, age seventeen and-a-half at the start of the project, with a Wechsler-Bellevue full scale quotient of 111, and a diagnosis of high blood pressure was considered by his home instruction teacher to be over-age for the project. In January, 1967 he received a high school diploma through the Home Instruction Department.

Control Case 10

A boy, age eighteen with a Wechsler-Bellevue full scale quotient of 102 and a diagnosis of colitis returned to high school and was graduated.

APPENDIX B

Students Who Returned to Regular School

Students Who Returned to Regular School

Experimental Returnees

Experimental Returnee Case 1

A girl, sixteen years, nine months of age, whose initial Wechsler-Bellevue full scale quotient was 115 and whose quotient at the time of final data collection in June, 1967 was 124, entered college on leaving the project. The college (Brooklyn of CUNY) is highly competitive for day students and this student maintained eighty-five in all her subjects throughout her first term which ended June, 1967. During initial psychological examination, she was characterized as articulate, bright and on the second examination, the following was said of her: "In good command of herself --- worked quickly and efficiently, intellectual functioning much better integrated than on previous contact." Her medical diagnosis was "vascular condition," the handicap was hemorrhaging of finger tips, and the limitation was that only a limited amount of writing could be done. The home instruction teacher had stated at the beginning of the project that the child's achievement was impeded by too much loss of schooling due to her handicap.

Experimental Returnee Case 2

A girl, age seventeen and zero months, whose initial Wechsler-Bellevue full scale quotient was seventy (verbal quotient 90, performance quotient 53) and whose final Wechsler-Bellevue full scale quotient in May, 1967 was seventy-four, entered a special school for the cerebral-palsied after two terms of participation in the group telephone hook-up. At the special school she did satisfactory work at the sixth grade level. Her medical diagnosis was cerebral palsy, her handicap was muscle involvement and the limitation was that writing was extremely difficult. On initial examination the psychologist commented that the performance items revealed very poor manual dexterity and that therefore the performance quotient should be regarded as minimal. On the second examination, when seen at the special school, she was in a wheelchair, her hands were deformed and she tended to give up very easily. The psychologist further observed that there were very many hostile remarks made by the girl about her family and that there was frequent shallow laughter which appeared to mask hostile feelings. She did make a few friends at the new school but because of her complete dependence on her father for transportation to see them, her social life remained confined to visits to aunts and cousins in New Jersey.

Experimental Returnee Case 3

A boy, age fifteen years, eight months, whose initial Wechsler-Bellevue full scale quotient was 118 and whose second Wechsler-Bellevue, administered in May, 1967, was 112, had a diagnosis of scoliosis with lateral curvature of the spine who was unable to maintain himself even in a wheelchair. After one term of participation in the group telephone hook-up, spinal surgery was successful enabling him to go to high school. His academic success in high school was marginal and the psychologist noted on re-examination, that, although the boy was cooperative and superficially friendly, he seemed restless and resentful of attempts to pinpoint verbal responses. He did not want to be bothered with details. He did not make friends in the high school nor did he maintain any from home instruction, but he said he had made friends, who are now away at college, in the neighborhood where he lived.

Experimental Returnee Case 4

A boy, age fourteen years, eleven months, whose initial Wechsler-Bellevue full scale quotient was seventy-three and whose final Wechsler-Bellevue full scale quotient was seventy-nine, transferred from home instruction to regular high school after one term of participation in the group telephone hook-up. He had been on home instruction for a broken leg and the fracture had been considered severe enough for the prognosis to be made that he would be on home instruction for a much longer time than he was. He failed three subjects in high school, and when seen for the final set of data, was repeating two of them and said he was doing better. Two of his neighborhood friends attend the same high school. During both psychological examinations he was observed to be cooperative, but lacking in involvement. Work on the performance test was characterized by trial and error approach.

Control Returnee Case

One student, age seventeen years, one month, whose initial Weschler-Bellevue full scale quotient was 114 and whose final Wechsler-Bellevue full scale quotient was 120, returned to high school after the project had been in progress one term. He was taking a course in architectural drafting at which he was doing well, although he was just below the passing mark in academic subjects. He said he was making friends in high school. He made no friends while on home instruction and lost touch with those in his previous school. His medical diagnosis was leukemia and he responded well to medication, enabling his return to school.

APPENDIX C

Instrument #1
Pupil Background

PN 22-325

BUREAU FOR THE EDUCATION OF THE PHYSICALLY HANDICAPPED
131 Livingston Street
Brooklyn 1, New York

Home to School Phone Study

Instrument #1
Pupil Background

Check one:

5 mi. ____
10 mi. ____

Identification:

Pupil: ____________________

Date of Birth ________ Sex ____

Grade: ______________

Date of Admission to H.I. ______

______

Diagnosis: ____________________

Handicap: ____________________

Limitation: ____________________

____

Ambulatory: ____________________

Bedcase: ____________________

Wheelchair Case: ________________

Test Data:

	Date	Test	Result
1.			
2.			
3.			
4.			
5.			
6.			

Achievement Level (Teacher's Estimate)

____

____

____

(continued)

Background data:

Please answer the following questions with a descriptive phrase or by checking a descriptive word when given:

1. Is child now in the H.S. of Air Program Yes ____ No ____
2. If child is not in the H.S. of Air Program, does he have FM Radio? Yes ____ No ____
   Explain:

3. What is the likelihood that the child will continue Home Instruction throughout 1964-1965
   probably ________ Maybe ______
   probably not ______ Surely ______

4. Have plans been considered for the pupil's return to school in a special class or otherwise? Yes ____ No ____
   Explain:

5. This child is:
   very withdrawn ______ Friendly _____
   somewhat reserved _____ quite friendly ____
   exuberant _____

6. What members of the family live at home?

   ____________________ ____________________
   ____________________ ____________________
   ____________________ ____________________

7. What members of the family work?

	Full time	Part time	Occupation
____________________	________	________	________
____________________	________	________	________
____________________	________	________	________

8. What is your estimate of the educational background of other family members?
   Explain:

9. Do language problems in the home cause difficulty in the Home Instruction situation?
   Explain:

APPENDIX D

Instrument #2
Scale of Social Maturity

PN 22-325

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH
110 Livingston Street
Brooklyn 1, New York

Acting Associate Superintendent
J. Wayne Wrightstone

Acting Director
Samuel D. McClelland

Dear Teacher:

In cooperation with the Bureau for the Education of the Physically Handicapped we have devised the attached questionnaire. We hope it will enable you to describe to us some of the different ways your student reacts to the use of school-to-home telephone.

You are the only one in a position to give us this information which is so important. We appreciate your cooperation.

If you have any questions on filling out this blank please call Dr. Kathleen Lolis at 596-6148. Please return the blanks to her in the enclosed, self-addressed envelope.

Sincerely yours,

SAMUEL D. McCLELLAND, Ph.D.
Acting Director

SDMcC:EE

PN 22-325 Instrument #2

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH

EVALUATION OF SCHOOL-TO-HOME TELEPHONE METHOD OF HOME INSTRUCTION

Scale of Social Maturity as Rated by Teacher

Name of Student ____

Do Not Write in Box
Code #__________
(1-3)
4__________1.Experimental
__________2.Control

Student's interest in literature

5. Student volunteers extra work in a report in social studies or in arts and crafts project which is concomitant to a reading interest.

_____1. Yes
_____2. No

6. Student goes to see a play or a movie related to a reading project
_____1. Yes
_____2. No

7. Student asks for encyclopedias
_____1. Yes
_____2. No

8. Student reads Fine's or Lovejoy's Guide or the CEEB study guides or other college entrance books
_____1. Yes
_____2. No

9. Check any of the following the child reads:
_____1. Reader's Digest
_____2. Popular Science
_____3. Popular Mechanics
_____4. Scientific American
_____5. Other ______________________________________

Student's Social Interests

10. Student goes to activities arranged by Home Instruction Department
_____1. Yes
_____2. No

11. Student has friends among home instruction students
_____1. Yes
_____2. No

(continued)

12. Personal Hygiene and appearance (washes hair, brushes teeth, keeps nails clean)
_____1. Very poor
_____2. Poor
_____3. Fair
_____4. Good
_____5. Very good
13. Shaved regularly in October
_____1. Yes
_____2. No
_____3. Not a boy
_____4. Hair too fine to shave
14. Observed Study Habits (Rate on factors such as: has a chair ready for teacher, has a clean work table, has done homework)
_____1. Very poor
_____2. Poor
_____3. Fair
_____4. Good
_____5. Very good
15. Use of radio to listen to High School of the Air
_____1. Regular
_____2. Occasional
_____3. Poor
_____4. Not at all
16. Use of School-to-Home Telephone
_____1. Regular
_____2. Occasional
_____3. Poor
_____4. Not at all
17. Study Skills
_____1. Studies regularly
_____2. Studies most of the time
_____3. Studies sporadically
_____4. Studies not at all
18. Recommendation for Health Class or return to school
_____1. I would recommend this child's return now
_____2. I think within the next year the child might be ready for return
_____3. I am doubtful this child can return
19. Comments

APPENDIX E

Instrument #3
Parental Rating of Student

PN 22-325

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH
110 Livingston Street
Brooklyn 1, N.Y.

J. WAYNE WRIGHTSTONE
Acting Associate Superintendent

SAMUEL D. McCLELLAND
Acting Director

November, 1965

Dear Parent:

Your child has been selected to participate in an experiment designed to evaluate results of school-to-home telephone use with some children on home instruction.

In cooperation with the Bureau of Education of the Physically Handicapped, we have devised the following questionnaire. We hope it will enable you to describe to use some of the different ways in which your child acts at home. You are the only one in a position to give us this information which is so important, and we appreciate your cooperation.

If you have any questions on filling out this blank please call Miss Kathleen Lolis at 596-6148. Please return the blanks to her in the enclosed self-addressed envelope.

Sincerely yours,

KL:EE

SAMUEL D. McCLELLAND, Ph.D.
Acting Director

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH
110 Livingston Street
Brooklyn 1, N.Y.

Acting Associate Superintendent
J. WAYNE WRIGHTSTONE

Acting Director
SAMUEL D. McCLELLAND

May, 1967

Dear Parent:

A year and a half ago we asked you to describe some of the different ways your child acts at home.

We are sending you another set of questions now. We appreciate your cooperation.

If you have any question on filling out this blank please call Miss Kathleen Lolis at 596-6148. Please return the blanks to her in the enclosed self-addressed envelope.

Sincerely yours,

SAMUEL D. McCLELLAND, Ph.D.
Acting Director

SCHOOL-TO-HOME TELEPHONE EVALUATION

Parent's Rating of Student
Instrument #3

(Please leave blank)

Code # ________
(1-3)

4.
________1.Experimental
________2.Control

Name ________________________________

5. Check one:
_____1. Boy
_____2. Girl

my relationship to child ____________________________

my child's handicap is ______________________________

Please check yes or no for each item

6. My child wears leg braces
_____1. Yes
_____2. No

7. My child is in a wheelchair
_____1. Yes
_____2. No

8. My child uses crutches
_____1. Yes
_____2. No

9. My child is bedridden
_____1. Yes
_____2. No

10. My child wears an orthopedic device
_____1. Yes
_____2. No

11. My child is diabetic
_____1. Yes
_____2. Not as far as I know

12. My child is asthmatic
_____1. Yes
_____2. No

13. My child is on limited activities
_____1. Yes
_____2. No

14. My child is on a special diet
_____1. Yes
_____2. No

15. My child has prescribed exercise
_____1. Yes
_____2. No

16. My child has seizures
_____1. Yes
_____2. No

My child's interest in literature and the world around him

What magazines do you have regularly?

Of these which does your child read fairly often?

What newspapers or magazines has he asked you for recently?

What books or magazines has he bought or brought home from the library to read recently?

What TV or radio programs does he tune in regularly?

My child's activities outside the home
Please check YES or NO for each item

17. Goes to a neighborhood store by himself
_____1. Yes
_____2. No

18. Goes to a downtown store by himself
_____1. Yes
_____2. No

19. Goes to a downtown store with someone else
_____1. Yes
_____2. No

20. Visits nearby relatives alone
_____1. Yes
_____2. No

21. Visits distant relatives alone
_____1. Yes
_____2. No

22. Visits distant relatives with someone else
_____1. Yes
_____2. No

23. Goes to movies with a friend
_____1. Yes
_____2. No

24. Goes to a high school sometimes
_____1. Yes
_____2. No

25. Goes to watch games at a high school
_____1. Yes
_____2. No

26. Attends ball games at a college or professional ball games with friends
_____1. Yes
_____2. No

27. Goes to Temple or Church regularly
_____1. Yes
_____2. No

28. Participates in organized play groups
_____1. Yes
_____2. No

29. Visits other home instruction students
_____1. Yes
_____2. No

30. Goes to parties given by friends his own age
_____1. Yes
_____2. No

31. Goes to Scouts regularly
_____1. Yes
_____2. No

32. Goes to radio or TV broadcasts at a studio with a friend
_____1. Yes
_____2. No

8

My child's personal responsibilities

33. Purchases all his own clothing
_____1. Yes
_____2. No

34. Purchases his or her own cosmetics or grooming aids or tooth brushes or hair preparations
_____1. Yes
_____2. No

35. Purchases his or her own clothing accessories including occasional jeans, skirts, blouses, boot-shoes
_____1. Yes
_____2. No

36. Purchases all his own underwear and sleeping garments
_____1. Yes
_____2. No

37. Purchases books and writing paper for his or her own use
_____1. Yes
_____2. No

38. Purchases gifts for presentation to relatives and friends
_____1. Yes
_____2. No

39. Purchases the refreshments for parties he or she gives
_____1. Yes
_____2. No

40. Accepts packages which are delivered for me or a neighbor
_____1. Yes
_____2. No

My child's care of self and things

41. Makes some of own clothes
_____1. Yes
_____2. No

42. Takes up own hems
_____1. Yes
_____2. No

43. Attends to own manicure
_____1. Yes
_____ 2. No

44. Does own laundry (personal clothes)
_____1. Yes
_____2. No

45. Does own ironing and pressing
_____1. Yes
_____2. No

APPENDIX F

Speech Paragraph

SPRING BEAUTY

The apple trees are in bloom now. All the birds are singing in the branches. The thrush and the robin are building nests in the oak trees. Girls and boys join in gathering up the old leaves and burning them. Our dog is running around and barking eagerly. We find violets under the tangled dead leaves. They are just tight buds now, but will soon open in the hot sun.

Did you ever try to find violets in the spring?

APPENDIX G

Instrument #5
Speech Rating Scale

22-325
5/67-150

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH
"SCHOOL TO HOME TELEPHONE STUDY"

Rating Sheet for Judges to Rate Speech
Revised Instrument #5

Pupil's Name ______________________________Code and File ____________

Please listen to the tape as many times as you need to and then place one check on the appropriate line in each section.

I. Attitudes
Willingness to speak
____1. extremely poor
____2. poor
____3. somewhat below average
____4. average
____5. somewhat above average
____6. very good
____7. superior

II. Rate and Fluency
____1. extremely slow
____2. very slow
____3. somewhat below moderate
____4. moderate
____5. somewhat above moderate
____6. very fast
____7. extremely fast

III. Voice - pitch
____1. very low
____2. low
____3. somewhat above normal
____4. normal
____5. somewhat below normal
____6. high
____7. very high

IV. Voice - volume
____1. very soft
____2. soft
____3. somewhat below normal
____4. normal
____5. somewhat above normal
____6. loud
____7. very loud

V. Articulation
____1. very poor
____2. poor
____3. some difficulty
____4. acceptable
____5. above average
____6. good
____7. excellent

VI. General Use of Language-Vocabulary
____1.very limited
____2. limited
____3. somewhat below average
____4. average
____5. somewhat above average
____6. good
____7. excellent

VII. General Use of Language-Grammatical Structure
____1. very poor
____2. poor
____3. somewhat below average
____4. average
____5. somewhat above average
____6. very good
____7. excellent

VIII. Overall Impression of Speech
____1. extremely poor for age
____2. poor for age
____3. somewhat below age
____4. acceptable for age
____5. somewhat above age
____6. very good for age
____7. excellent for age

APPENDIX H

Psychologists' Rating Scale of Interviews

P.N. 22-325

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH
"SCHOOL-TO-HOME TELEPHONE"

DIRECTIONS FOR PSYCHOLOGISTS

Using the figure drawing and answers to questions (i.e., How old is person?, What does person want to be?, What does person like to do?, What is person afraid of?, What is person doing in drawing?) rate each child on each of the 14 items in the accompanying scale. It is recommended that you study the figure drawing and answers of a child so that you obtain a general impression about his self-worth and social interest before you respond to the items in the scale. If you find it difficult to rate a child in some item, force a judgment to the best of your ability. It is important that you rate every child on each of the 14 items.

On the line provided to the right of each item, write in your rating using the following 9-point scale:

1. VERY LOW
2. VERY LOW-TO-LOW
3. LOW
4. LOW-TO-AVERAGE
5. AVERAGE
6. AVERAGE-TO-HIGH
7. HIGH
8. HIGH-TO-VERY-HIGH
9. VERY HIGH

RATING SCALE

A. SELF WORTH

B. SOCIAL INTEREST

TOTAL SCORE ______________

Indicate sex of child on each sheet M______ F_______

Child ____________
(code)

ITEM NO. RATING

A-1 Degree of satisfaction with his or her sex role (Degree of preference for his or her sex role in society) _____

A-2 Acceptance of his or her chronological age _____

A-3 Vocational aspiration (This refers to level of prestige of vocation, as viewed in society) _____

A-4 Degree of acceptance of heterosexual interest _____

A-5 Feeling of being intellectually adequate _____

A-6 Degree of realism in viewing himself or herself _____

A-7 Degree to which subject feels he (or she) lives in a non-threatening environment _____

TOTAL SCORE _____

B-1 Ability to cope with others (in non-hostile manner) _____

B-2 Ability to communicate feelings to others _____

B-3 Degree to which subject feels actively involved with others (without fear of peers and/or adults) _____

B-4 Degree to which subject accepts members of his peer group _____

B-5 Degree to which subject accepts adults and/or authority figures _____

B-6 Degree of interest in social events (dances, parties, etc.) _____

B-7 Degree to which subject understands the behavior of others _____

APPENDIX I

Psychologists' Rating of Figure Drawings

P.N. 22-325
11/67-350

BOARD OF EDUCATION OF THE CITY OF NEW YORK
BUREAU OF EDUCATIONAL RESEARCH

"SCHOOL TO HOME TELEPHONE"

DIRECTIONS FOR PSYCHOLOGISTS

Using the interview material rate each student on each of the forty-four items in the four sections of the accompanying scale. If you find it difficult to rate a child in some item, force a judgment to the best of your ability. Use the category "does not apply" or "no evidence" only if you cannot by any possibility force a rating.

On the line to the right of each item write in your rating using the following eight-point scale:

The described characteristic is present:

0. DOES NOT APPLY OR NO EVIDENCE

1-2 MARGINALLY OR SCARCELY

3-4 TO MODERATE EXTENT

5-6 TO CONSIDERABLE EXTENT

7-8 MARKEDLY

AMBITION-MOTIVATION-ASPIRATION LEVEL

RATING

1. Shows interest in school work. ______
2. Shows persistent effort in studies. ______
3. Plans to complete high school. ______
4. Plans to get college education. ______
5. Has definite occupational or educational goals. ______
6. Has investigated requirements for educational or occupational goals. ______
7. Participates in WNYE work assignments. ______
8. Occupational or educational goals require development of skills at level which ignores physical handicap. ______
9. Expects to succeed in chosen educational or occupational goal. ______
10. Hobbies show investment of own efforts. ______

SOCIAL INTEREST

RATING

1. Wishes to return to regular school attendance. ______
2. Participates actively in social organizations or in groups relating to physical handicap. ______
3. Shows interest in cultivating adult relationships. ______
4. Expresses feelings to others. ______
5. Is interested in going to parties and dances. ______
6. Likes to be with peers. ______
7. Expresses an interest in making new peer-friends. ______
8. Shows evidence of keeping friends over a long period of time. ______
9. Expresses acceptance of his/her teacher. ______
10. Expresses interest in current events. ______
11. Reads newspapers, magazines. ______
12. Does not restrict social life to relatives and/or very near neighbors. ______

PERSONAL RESPONSIBILITY

RATING

1. Within limits of physical handicaps, takes care of personal needs, e.g., dress, appearance, room tidiness. ____
2. Knows type of medication or purpose of physical therapy prescribed ____
3. Homework assignments are carried through without parental assistance. ____
4. Takes initiative in organizing study hours or leisure. ____
5. Keeps track of WNYE schedule as appropriate for school work. ____
6. Within limits of physical handicaps, assists with definite household chores. ____
7. Indicates interest in solving or dealing with personal problems by himself. ____
8. Resourceful in seeking help with personal problems in daily living and routines without relying upon parents. ____
9. Initiates activities involving peers. ____
10. Expresses the view that others consider that he or she is honest or dependable. ____

PERSONAL ADJUSTMENT

RATING

1. Manner friendly and trusting. ______
2. Shows optimism about disability. ______
3. Has realistic understanding of disability. ______
4. Within limits of handicap, appears self-reliant. ______
5. Has at least two friends outside family. ______
6. Attempts to maintain normal routines of work and recreation, within disability limits. ______
7. Has positive attitude toward family. ______
8. Shows spontaneity interpersonally. ______
9. Has appropriate social maturity for age. ______
10. Appears emotionally secure. ______
11. Can express negative feelings with adequate control. ______
12. Likes school program. ______

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OFFICE OF EDUCATION
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4. SOURC. New York City, Board of Education
Bureau of Educational Research
110 Livingston Street, Brooklyn, N.Y. 11201

5. TITLE Evaluation of a Method of School-to-Home Telephone Instruction of Physically Handicapped, Homebound Adolescents.

6. AUTHOR(S) Lolis, K., Capone, T.

7. DATE 28 June 1968

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15. ABSTRACT *(250 words max.)*

Intellectual, academic and social-emotional development were compared for physically, handicapped, homebound adolescent control and experimental students with whom a method of combined instruction was tried for 15 months which utilized radio broadcasts, group telephone hook-up with subject specialist broadcast teachers and regular visits from home instruction teachers.

The students were a whole population of physically handicapped with long-term homebound expectancy in grades 9-11 in Brooklyn, New York, who were assigned to experimental or control group by toss of a coin.

Methods of measurement and evaluation used before and after the experiment included individual psychological examination and interview, speech recordings, standardized achievement tests and questionnaires submitted to parents, teachers and siblings. Consultants judged social-emotional factors and speech. Where applicable, t-tests and analysis of co-variance were used to determine statistical significance of differences. The thirty experimental and twenty-three control students showed no significant differences on a pre-test or post-test basis in intellectual or academic development including speech, or in social maturity. There was a significant basic personality change in the experimental group in that the students gave evidence of a more positive orientation towards social interest. The social interest, however, was not reflected in behavioral change.

Those who dropped out before completion of the project lacked motivation, either were below average in intellectual potential, were close to completion of their academic career because of age rather than grade placement, or improved sufficiently in health to return to school.

16. RETRIEVAL TERMS *(Continue on reverse)*

Physically Handicapped
Homebound
Adolescents
Figure Drawings
Radio Broadcast Classes
Structured Interviews
Home Instruction
Teleclass
School-to-Home Telephone
Speech Recordings

17. IDENTIFIERS

Group Telephone Instruction

Figure 3. ERIC Document Resume